

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A tray drive mechanism for an optical disc apparatus, comprising:

a base chassis;

a tray for ~~placing an optical disc therein and~~ loading the an optical disc into ~~an~~ the optical disc apparatus, the tray configured to move between an open position external to the optical disc apparatus and a close position internal to the optical disc apparatus, and the tray ~~being provided and slidable in the optical disc apparatus to open and close, and~~ having a rack ~~to be~~ provided with a driving force for ~~the opening and closing~~ moving the tray;

an optical pickup to irradiate a laser beam onto the optical disc for recording ~~and/or~~ and reproducing ~~signals or data~~ information;

a feed motor for feeding the optical pickup in a radial direction of the optical pickup;

a gear train ~~to be~~ driven by the feed motor to rotate, ~~and~~ the gear train comprising ~~plural gears which include~~ a feed gear to mesh with a rack provided on the optical pickup for feeding the optical pickup and ~~also include~~ a tray drive gear to mesh with the rack of the tray for ~~opening and closing~~ moving the tray between the open and close positions;

a drive mechanism chassis having mounted thereon the optical pickup, the feed motor, the feed gear and a switching mechanism for switching operation

from a feeding operation of the optical pickup to a clamping and unclamping operation of the optical disc;

a rack member comprising a boss and being provided to mesh with the feed gear and driven ~~in a direction to~~ toward an inner circumference of the optical disc;

a plate member comprising a boss and a cam groove ~~comprising a slope portion~~, the boss of the rack member being provided to transfer a driving force to the plate member, wherein ~~the~~ a slope portion of the cam groove of the plate member meshes with the boss of the rack member when the rack member is driven ~~in the direction to~~ toward the inner circumference of the optical disc; and

a cam slider slidably supported by the base chassis of the optical disc apparatus, the boss of the plate member being provided to transfer a driving force to the cam slider, wherein the cam slider comprises a cam groove to guide the boss of the plate member for raising and lowering the drive mechanism chassis so as to clamp and unclamp the optical disc, ~~and comprises~~ a boss to guide the tray, and ~~also comprises~~ a rack to mesh with the tray drive gear,

wherein the tray comprises a cam groove comprising a slope surface to be engaged with the boss of the cam slider for moving the tray ~~in a direction to~~ between the open and close ~~the tray positions~~ when the cam slider slides is ~~slided~~,

wherein when the rack member is driven ~~in a direction to~~ toward the inner circumference of the optical disc, the cam slider slides ~~is slided~~ in linkage

with the plate member to cause the rack of the cam slider to mesh with the tray drive gear, and

wherein the mesh between the rack of the cam slider and the tray drive gear causes ~~driving of the cam slider to be switched from driving by the plate member to driving~~ driven by the tray drive gear, instead of the plate member, so that the boss of the cam slider pushes the slope surface of the cam groove for sliding the tray to cause the rack of the tray to mesh with the tray drive gear, whereby the tray is driven by the feed motor to the open and close positions.

2. (Original) The tray drive mechanism for an optical disc apparatus according to claim 1, wherein the gear train includes gears which are matched in phase with each other in assembly.

3. (Original) The tray drive mechanism for an optical disc apparatus according to claim 1, wherein the plate member further comprises, at the cam groove thereof, a boss restricting portion which extends in a direction approximately perpendicular to the feed direction of the optical pickup, and which restricts movement of the boss of the rack member in the feed direction in tray opening operation.

4. (Currently amended) The tray drive mechanism for an optical disc apparatus according to claim 3, wherein the optical pickup is biased by a spring member having one end contacted with the optical pickup and another end contacted with the rack member in the direction ~~to~~ of the inner circumference of the optical disc.

5. (Original) The tray drive mechanism for an optical disc apparatus according to claim 3, wherein the optical pickup further comprises a stopper portion to contact a portion of the rack member for restricting movement of the optical pickup in the feed direction when the optical pickup is positioned at an innermost circumference position thereof.

6. (Currently amended) The tray drive mechanism for an optical disc apparatus according to claim 1, which further comprises an innermost position detection switch for detecting an innermost circumference position of the optical pickup, wherein completion of a tray closing operation is detected by switching off of the innermost position detection switch.

7. (Currently amended) The tray drive mechanism for an optical disc apparatus according to claim 1, wherein the plate member further comprises a plate spring portion which can be elastically deformed in a direction perpendicular to a sliding direction of the plate member, and

wherein the drive mechanism chassis further comprises a stopper rib to be engaged with the plate spring portion for restricting sliding movement of the plate member after the rack member is driven by the feed gear ~~in the direction to~~ toward the inner circumference of the optical disc so as to be separated from the feed gear.

8. (Currently amended) The tray drive mechanism for an optical disc apparatus according to claim 1, wherein the plate member further comprises a rib-like wall portion to contact the boss of the rack member for restricting sliding movement of the plate member when the optical pickup is positioned at an inner circumference stop position in a power supply off-state.

9. (Currently amended) The tray drive mechanism for an optical disc apparatus according to claim 1, wherein the plate member further comprises a plate spring portion which can be elastically deformed in a direction perpendicular to a sliding direction of the plate member, and

wherein the drive mechanism chassis further comprises a stopper rib for the plate spring portion to ride on and contact in a recording and reproducing operation or a seek operation of the optical disc, thereby preventing the plate member from moving in the recording and reproducing operation or the seek operation.

10. (Currently amended) The tray drive mechanism for an optical disc apparatus according to claim 1, wherein the plate member further ~~has~~ includes a gear fall-off prevention plate ~~provided at an end thereof which~~ that is positioned above ~~the~~ gears constituting the gear train[[,]] and ~~which~~ that partially overlaps the gears, ~~as seen in a plan view,~~ to prevent such the gears from falling from the drive mechanism chassis off.